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SPECIAL COUNSEL
JEROLD L. JACOBS

January 9, 1997

William F. Caton, Acting Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: MM Docket No. 87-268
Advance Television Systems

Dear Mr. Caton:

On behalf of our client, Shockley Communications Corporation, licensee of Station WQOW-TV, Eau Claire, Wisconsin, transmitted herewith for filing are an original and nine (9) copies of its **"Reply Comments and Request for Change of DTV Allotment for Station WEAU-TV to Avoid Interference"** in the above-referenced Docket.

Please direct any communications or inquiries concerning this matter to the undersigned.

Very truly yours,

Jerold L. Jacobs

Enc.

cc: As on Certificate of Service (all w/enc.)

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

TO: The Commission

REPLY COMMENTS AND
REQUEST FOR CHANGE OF DTV ALLOTMENT FOR
STATION WEAU-TV TO AVOID INTERFERENCE

SHOCKLEY COMMUNICATIONS CORPORATION ("SCC"), licensee of Station WQOW-TV, Eau Claire, Wisconsin, by its attorneys, hereby requests, as Reply Comments in this proceeding, that the allotment of DTV Channel 16 to Station WEAU-TV, Eau Claire, Wisconsin, be changed to Channel 39 in the next iteration of the DTV Table of Allotments to avoid serious and unnecessary interference to Station WQOW-TV's NTSC and DTV channels. In support whereof, the following is shown:

I. Introduction

1. Stations WQOW-TV (Channel 18) and WEAU-TV (Channel 13) are licensed to Eau Claire, Wisconsin, and both stations are operational. The draft DTV Table of Allotments (the "Table") -- Appendix B of the Sixth Further Notice of Proposed Rule Making ("Sixth Notice"), 11 FCC Rcd 10968 (1996) -- proposes (at page B-41) that DTV Channel 14 be allotted to WQOW-TV and DTV Channel 16 be allotted to WEAU-TV. Paragraph 88 of the Sixth Notice seeks comments on the draft Table in light of the Commission's allotment and channel spacing criteria. This Request is being filed prior to the January 24, 1997 deadline for Reply

Comments so that it may be considered in conjunction with the Commission's further refinement of the draft Table.

2. SCC asked David A. White, an engineering consultant and practicing broadcast engineer in Eau Claire, Wisconsin, to analyze the proposed DTV allotments for Stations WQOW-TV and WEAU-TV in light of the draft Table in the Sixth Notice and the Commission's channel spacing and allocations criteria. Mr. White determined that, if DTV Channel 16 is allotted to WEAU-TV -- as proposed in the draft Table -- significant interference will be caused to WQOW-TV's existing NTSC Channel 18 and proposed DTV Channel 14. As SCC will now elaborate, SCC urges that the Commission should eliminate this interference by allotting DTV Channel 39 to WEAU-TV, instead of Channel 16.

II. DTV Channel 39 Should be Allotted to WEAU-TV

3. Attached hereto as Exhibit A is an Engineering Report ("Report") prepared by Mr. White. There, he concludes that the draft Table erred in proposing to allot DTV Channel 16 to WEAU-TV, because that allotment will create serious interference to WQOW-TV's existing NTSC Channel 18 and proposed DTV Channel 14. The reason is simply that the proposed allotment of Channel 16 to WEAU-TV is shortspaced to WQOW-TV in terms of the minimum required DTV-NTSC separations and the minimum required DTV-DTV separations specified in the Sixth Notice. More specifically, the Report provides complete supporting documentation to demonstrate that: (a) the separation of WEAU-TV's DTV Channel 16 to WQOW-TV's NTSC Channel 18 is 19.8 miles short of the 60-mile distance required for Zone II DTV allotments in this proceeding (id. at 2); (b) allotting DTV Channel 16 to WEAU-TV and DTV Channel 18 to WQOW-TV violates the DTV-DTV separations specified in the Sixth

Notice, because the required interference protection will be exceeded at a distance of only 32.6 miles from WQOW-TV's transmitter (id. at 3-4); and (c) allotting DTV Channel 39 to WEAU-TV, instead of Channel 16, meets all DTV-NTSC separation requirements by at least 2.6 miles and all DTV-DTV interference issues (id. at 5). Moreover, the substitution of DTV Channel 39 will not require any other changes to the Table or any modifications of any existing stations, and it also is fully compatible with the "modified" DTV Table proposed in the "Broadcasters' Comments" filed in this proceeding on November 22, 1996 (id. at 5-6).

4. In sum, it is clear from the Report that allotting DTV Channel 16 to Station WEAU-TV is wholly inconsistent with the Commission's channel spacing and allocations requirements in this proceeding. Therefore, as a matter of sound regulatory practice and administrative due process, SCC urges that this allotment error in the draft Table should be corrected in conjunction with the Commission's preparation of the next iteration of the Table.

III. Conclusion

5. The Commission recognized in the Sixth Notice that designing the DTV Table is an ongoing process, as stations engage in frequency coordination, gain experience, go on and off the air, etc. Nevertheless, SCC submits that it is in the public interest that the Table be perfected as much as possible when the next iteration is issued by the Commission within the coming weeks. Because of the above-described manifest technical error, SCC urges that Station WEAU-TV's DTV allotment should be changed to Channel 39 immediately to properly protect Station WQOW-TV's NTSC and DTV channels and avoid confusion as the stations prepare to implement the Table.

WHEREFORE, in light of the foregoing, SCC respectfully requests that the Commission

should change the DTV allotment for Station WEAU-TV to Channel 39 when it issues the next iteration of the DTV Table of Allotments.

Respectfully submitted,

SHOCKLEY COMMUNICATIONS CORPORATION

By _____
Howard J. Braun
Jerold L. Jacobs

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Its Attorneys

Dated: January 9, 1997

EXHIBIT A

TECHNICAL ENGINEERING REPORT

The following technical report was prepared as support material for the request by Shockley Communications Corporation to revise the DTV channel allocation plan as released August 14, 1996 (FCC 96-317) MM Docket No. 87-268. The contention is that allocating DTV channel 16 to WEAU-TV, with an output power level of 1,768.9 kw, will cause serious and unnecessary interference to both the NTSC Shockley Communications station currently operating on UHF channel 18 (WQOW), Eau Claire, Wisconsin, and also to it's associated DTV channel 14 (WQOW). My research of the proposed DTV channel allocations finds that this single point source of multiple interference problems can be eliminated by substituting DTV channel 39 in place of the proposed channel 16 for WEAU Eau Claire, Wisconsin.

1. INTERFERENCE CONCERNS OF CHANNEL 16 ALLOTMENT:

The proposed DTV channel allocation tables released with the FCC's Sixth Further Notice of Proposed Rule Making (MM Docket No. 87-268) suggests that UHF channel 16 be allotted to WEAU-TV, Eau Claire, Wisconsin. The present

WEAU transmitter site (North Latitude 44 deg. 39 min. 51 sec. and West Longitude 90 deg. 57 min. 41 sec.) is located 64.6 km (40.2 miles) from the WQOW "NTSC" station (North Latitude 44 deg. 57 min. 39 sec. and West Longitude 91 deg. 40 min. 05 sec.) licensed to channel 18.

As shown on engineering exhibit 1, the 64.6 km (40.2 miles) separation of DTV channel 16, and the NTSC -2 channel "UHF taboo" channel 18 is 32.0 km (19.8 miles) short of the 96.6 km (60.0 mile) distance required for Zone II future DTV allocations as specified in MM Docket No. 87-268. Engineering exhibit 1 also lists all of the other co-channel, adjacent channel and "taboo" channel separations required for the channel 16 allocation to Eau Claire, Wisconsin.

As noted in the FCC Sixth Further Notice of Proposed Rule Making (MM Docket No. 87-268), the point at which interference occurs from a DTV station operating 2 UHF channels below an active NTSC channel is at -23.73 db. Based on

the power levels specified in the table released August 14, 1996, the specified interference level will be exceeded at a distance of just 25.5 miles from the NTSC station operating on channel 18. Engineering map exhibit 3 clearly shows the point at which the projected interference will occur. All viewers located further east of that line will be subjected to increasing levels of interference from DTV channel 16. Both stations transmitter sites are marked on exhibit 3.

The FCC Sixth Further Notice of Proposed Rule Making also specified a DTV to DTV protection ratio of -59.13 db for stations removed by 2 channels. The DTV channel delegated to "NTSC" station WQOW-TV (Eau Claire) is 14, at an output power level of 50 kw. Because of the power levels, tower heights, and geographic separation between the DTV stations operating on channel 14 and 16, the interference protection will be exceeded at a distance of just 52.5 km (32.6 miles) from the

WQOW transmitter. The location of this interference to the WQOW DTV channel 14 grade "B" signal contour is shown on engineering map exhibit 4. By virtue of a single DTV allocation of channel 16 to WEAU, Eau Claire Wisconsin, significant interference has been created for both the existing NTSC (18) and the future DTV (14) channels of WQOW-TV.

Engineering exhibits 1A and 2A are attached to show that all other co-channel DTV, adjacent channel DTV, and Canadian channel NTSC separation requirements are met by the channel 16 allotment to WEAU, Eau Claire, Wisconsin.

2. PROPOSED ALTERNATIVE SOLUTION:

In some parts of the United States, some degree of interference is inevitable, because of the high number of NTSC and DTV channels congested into relatively small areas. This however is not the case in Eau Claire, Wisconsin. My engineering study of this location has identified UHF channel 39 as an ideal, interference free, DTV alternative for

WEAU, Eau Claire, Wisconsin. As shown in engineering exhibit 2, a DTV allocation of channel 39 would meet all DTV to existing NTSC station separation requirements (as specified in MM Docket No. 87-268) by at least 4.1 km (2.6 miles). Engineering exhibit 2A shows compliance with DTV to DTV co-channel and adjacent channel separation distances for channel 39. These results clearly indicate that the substitution of DTV channel 39 in place of channel 16 will not only solve the previously documented interference issues, but will also require no other changes to the proposed DTV allocation table, or modifications of any existing stations. Engineering exhibit 2B shows that the nearest Canadian channel 39 allocation is more than 744 km (462.3 miles) away, clearly not a problem.

The substitution of channel 39 also conforms with the various channel changes suggested by the MSTV group in their comments filed November 1996. Engineering exhibits 1, 1A,

1B, 2, 2A, and 2B are accurate and unaffected by the changes in the MSTV alternative allocation proposal.

SUMMARY:

Because of the high probability of serious interference created by the DTV use of channel 16 in Eau Claire, Wisconsin, to both NTSC channel 18 (WQOW) and DTV channel 14 (WQOW), and the availability of a technically viable alternative channel, it would be far more appropriate to substitute UHF channel 39 in place of channel 16 for WEAU future DTV service.

ENGINEERING EXHIBIT 1 = DTV to NTSC Requirements

Channel	Nearest allotment.. (Part 73.606)	Separation Required (KM)	Separation Required (Miles)	Zone.	Actual Distance (KM)	Actual Distance (Miles)	Excess Separation (KM)	Excess Separation (Miles)	Geog. Co-Ordinates	
14	Suring, WI	96.6	60.0	Zone II	204.9	127.3	108.3	67.3	44.59.30	88.23.55
15	Austin, MN	88.5	55.0	Zone II	194.5	120.9	106.0	65.9	43.40.34	93.00.09
16	Manitowoc, WI	244.6	152.0	Zone II	269.0	167.1	24.4	15.1	44.07.31	87.37.41
17	St. Paul, MN	88.5	55.0	Zone II	175.7	109.2	87.2	54.2	45.03.29	93.07.27
18	Eau Claire, WI	96.6	60.0	Zone II	64.6	40.2	-32.0	-19.8	44.57.39	91.40.05
19	La Crosse, WI	96.6	60.0	Zone II	100.5	62.5	3.9	2.5	43.48.23	91.22.04
20	Wausau, WI	96.6	60.0	Zone II	103.8	64.5	7.2	4.5	44.55.14	89.41.31
21	Madison, WI	80.5	50.0	Zone I	213.8	132.8	133.3	82.8	43.03.08	89.28.42
23	Minneapolis, MN	96.6	60.0	Zone II	175.7	109.2	79.1	49.2	45.03.30	93.07.27
24	Mason City, IA	96.6	60.0	Zone II	205.6	127.8	109.0	67.8	43.22.20	92.49.59
30	Milwaukee, WI	80.5	50.0	Zone I	297.5	184.9	217.0	134.9	43.05.15	87.54.19
31	La Crosse, WI	96.6	60.0	Zone II	100.7	62.6	4.1	2.6	43.48.17	91.22.06

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

This channel allocation does not meet the separation requirements specified in MM Docket No. 87-268. The +2 restrictions on channel 18 are 32.0 km (19.8 miles) short spaced, and will create significant interference to the NTSC channel 18 signal reception.

ENGINEERING EXHIBIT 1A = DTV to DTV Requirements

Channel	Nearest allotment.. (Part 73.606)		Separation Required (KM)	Separation Required (Miles)	Zone.	Actual Distance (KM)	Actual Distance (Miles)	Excess Separation (KM)	Excess Separation (Miles)	Geog. Co-Ordinates N. Lat. / W. Long.
15	Wausau, WI	(20)	88.5	55.0	Zone II	103.8	64.5	15.3	9.5	44.55.14 89.41.31
16	Waterloo, IA	(7)	223.7	139.0	Zone II	260.9	162.1	37.2	23.1	42.24.04 91.50.43
17	La Crosse, WI	(19)	88.5	55.0	Zone II	100.5	62.5	12.0	7.5	43.48.23 91.22.04

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

All channel separation requirements from the proposed DTV allocation, to all existing DTV allocations are met and exceeded by at least 12.0 km (7.5 miles).

ENGINEERING EXHIBIT 1B = DTV to NTSC Requirements

Channel	Nearest allotment.. (Part 73.606)	Separation Required (KM)	Separation Required (Miles)	..Zone. Actual Distance (KM)	Actual Distance (Miles)	Excess Separation (KM)	Excess Separation (Miles)	Geog. Co-Ordinates N. Lat. / W. Long.
16	Nipigon, Ontario	244.6	152.0	522.3	324.5	277.7	172.5	48.58.18 88.18.24

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

Required separation to the nearest Canadian co-channel station is exceeded by 277.7 km (172.5 miles).

ENGINEERING EXHIBIT 2 = DTV to NTSC Requirements

Channel	Nearest allotment.. (Part 73.606)	Separation Required (KM)	..Zone. (Miles)	Actual Distance (KM)	(Miles)	Excess Separation (KM)	(Miles)	Geog. Co-Ordinates	
24	Mason City, IA	96.6	60.0 Zone II	205.6	127.8	109.0	67.8	43.22.20	92.49.59
25	La Crosse, WI	96.6	60.0 Zone II	100.8	62.7	4.2	2.7	43.48.16	91.22.18
31	La Crosse, WI	96.6	60.0 Zone II	100.7	62.6	4.1	2.6	43.48.17	91.22.06
32	Appleton, WI	96.6	60.0 Zone II	236.7	147.1	140.1	87.1	44.21.32	87.58.58
34	Eagle River, WI	96.6	60.0 Zone II	182.7	113.6	86.1	53.6	45.46.30	89.14.55
35	La Salle, IL	80.5	50.0 Zone I	408.3	253.7	327.8	203.7	41.16.51	88.56.13
36	Park Falls, WI	96.6	60.0 Zone II	152.3	94.6	55.7	34.6	45.56.43	90.16.28
37	Ch. 37 is reserved for radio astronomy	N/A	N/A			N/A	N/A		
38	Green Bay, WI	88.5	55.0 Zone II	234.6	145.8	146.1	90.8	44.24.35	88.00.05
39	Rockford, IL	244.6	152.0 Zone II	299.3	186.0	54.7	34.0	42.17.26	89.09.51
40	Dubuque, IA	88.5	55.0 Zone I	240.0	149.1	151.5	94.1	42.31.05	90.37.16
41	St. Cloud, MN	96.6	60.0 Zone II	230.4	143.2	133.8	83.2	45.23.00	93.42.30
42	Alexandria, MN	96.6	60.0 Zone II	351.0	218.1	254.4	158.1	45.41.59	95.10.36
43	Redwood Falls, MN	96.6	60.0 Zone II	356.9	221.8	260.3	161.8	44.29.03	95.29.27
44	Chicago, IL	80.5	50.0 Zone I	404.2	251.2	323.7	201.2	41.53.56	87.37.23
46	Port Huron, MI	80.5	50.0 Zone I	694.2	431.4	613.7	381.4	42.58.37	82.27.52
47	Rochester, MN	96.6	60.0 Zone II	132.4	82.3	35.8	22.3	44.02.39	92.23.56
53	Lansing, MI	80.5	50.0 Zone I	564.5	350.8	484.0	300.8	42.25.11	84.31.26
54	Muskegon, MI	80.5	50.0 Zone I	440.9	274.0	360.4	224.0	42.57.25	85.54.07

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

All channel separation requirements from the proposed DTV allocation, to all existing NTSC stations are met and exceeded by at least 4.1 km (2.6 miles).

ENGINEERING EXHIBIT 2A = DTV to DTV Requirements

Channel	Nearest allotment.. (Part 73.606)	Separation Required (KM)	Separation Required (Miles)	Zone.	Actual Distance (KM)	Actual Distance (Miles)	Excess Separation (KM)	Excess Separation (Miles)	Geog. Co-Ordinates N. Lat. / W. Long.
38	Rochester, MN (10)	88.5	55.0	Zone II	167.5	104.1	79.0	49.1	43.34.15 92.25.37
39	Green Bay, WI (38)	223.7	139.0	Zone II	234.6	145.8	10.9	6.8	44.24.35 88.00.05
40	St. Cloud, MN (41)	88.5	55.0	Zone II	230.4	143.2	141.9	88.2	45.23.00 93.42.30

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

All channel separation requirements from the proposed DTV allocation, to all existing DTV allocations are met and exceeded by at least 10.9 km (6.8 miles).

ENGINEERING EXHIBIT 2B = DTV to NTSC Requirements

Channel	Nearest allotment.. (Part 73.606)	Separation Required (KM)	Separation Required (Miles)	..Zone. Actual Distance (KM)	Distance (Miles)	Excess Separation (KM)	Excess Separation (Miles)	Geog. Co-Ordinates N. Lat. / W. Long.
39	Lac Du Bonnet, MB	244.6	152.0	744.0	462.3	499.4	310.3	50.18.00 94.04.00

Separation distances are calculated to both metric and U.S. standards by use of the mathematical formulas and geographic co-ordinate reference points, as specified by FCC rule Part 73.208 and 73.611. Separations were verified by scale measurement on USGS 7 1/2' topographical survey maps. Eau Claire, WI is at N. Latitude 44 deg. 39 min. 51 sec and W. Longitude 90 deg. 57 min. 41 sec.

Required separation to the nearest Canadian co-channel station is exceeded by 499.4 km (310.3 miles).

Engineering Exhibit 3

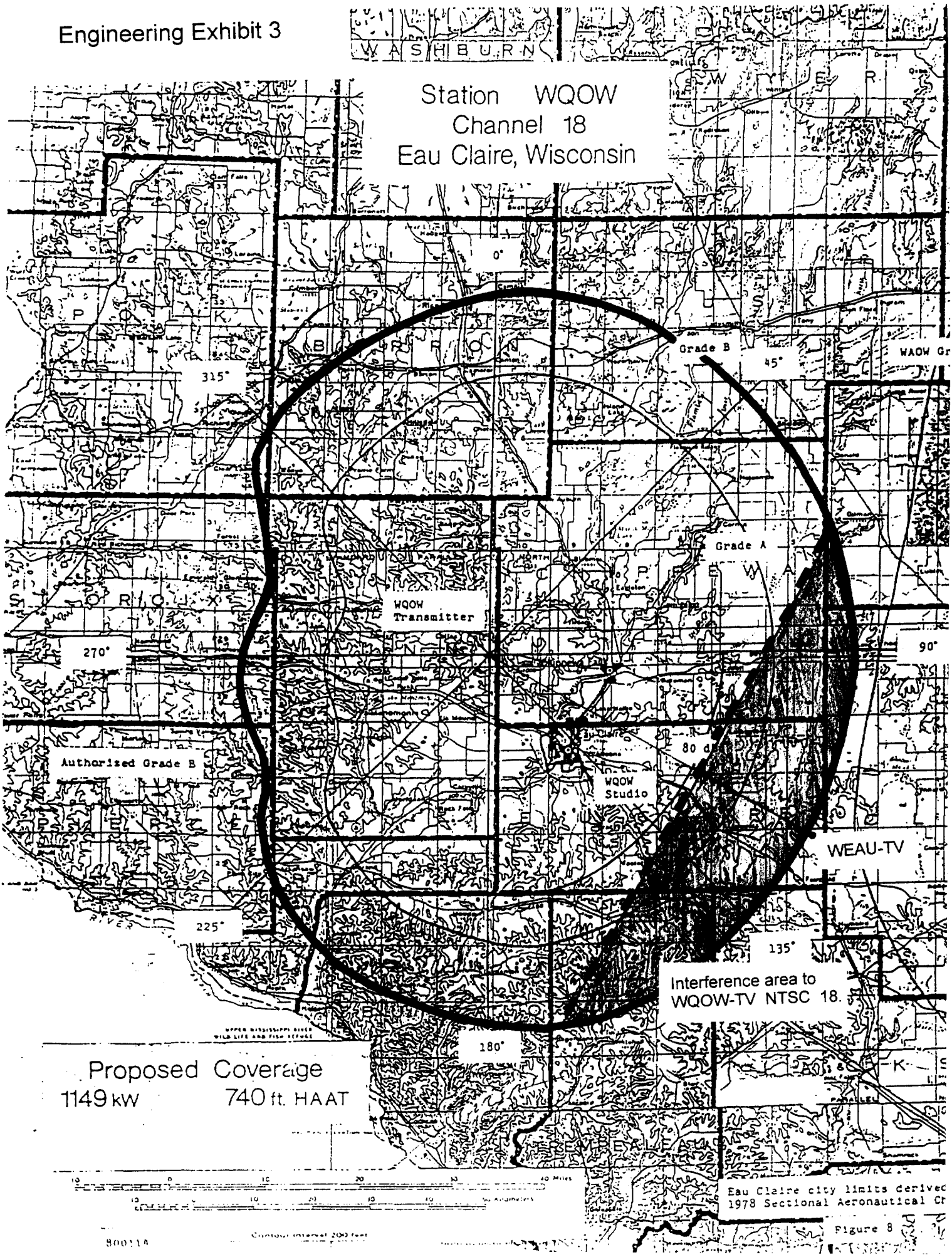
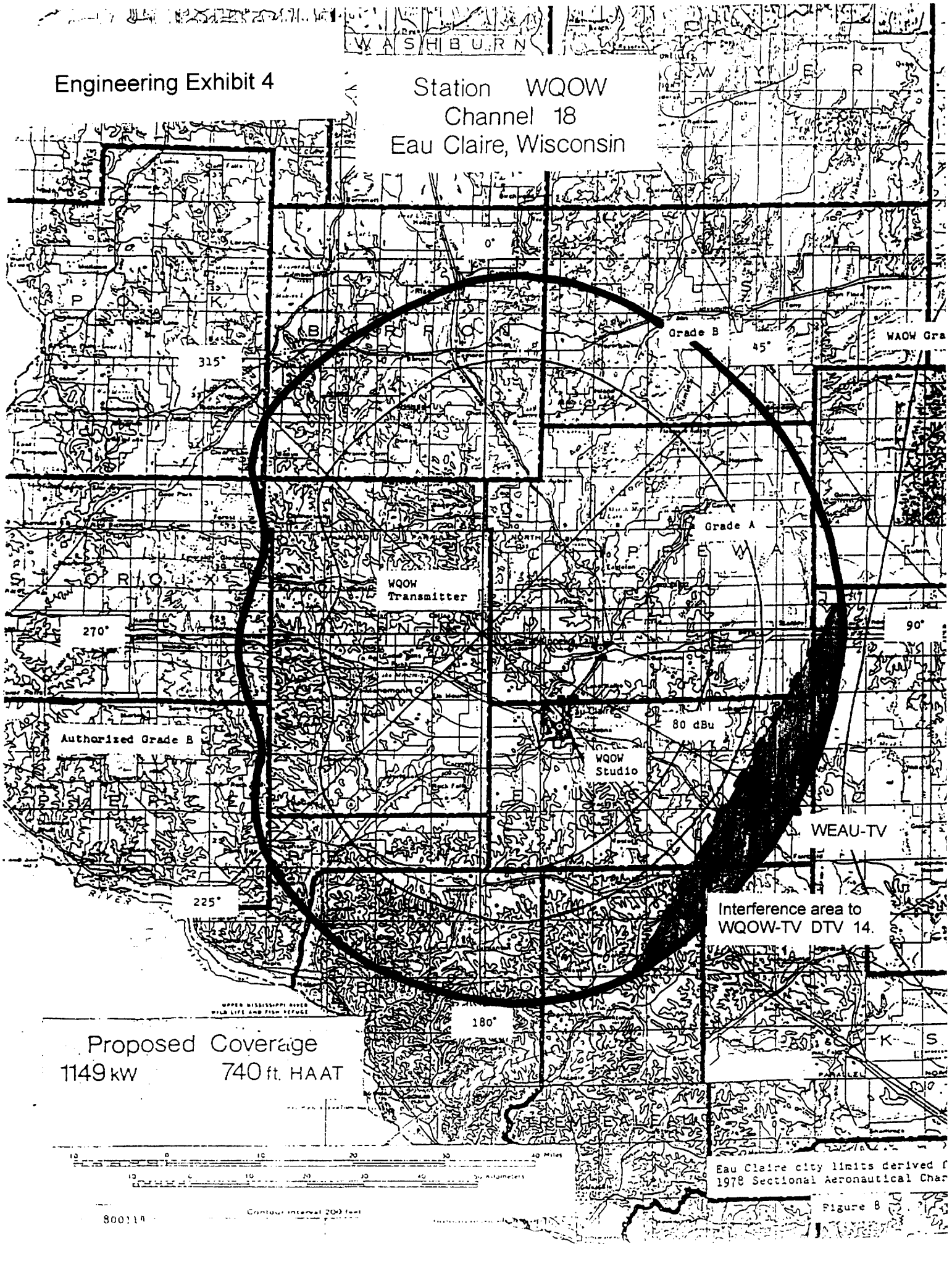


Figure 8


Engineering Exhibit 4
Station WQOW
Channel 18
Eau Claire, Wisconsin
WASHBURN
0°
45°
90°
180°
225°
270°
315°
Grade B
Grade A
80 dBu
WQOW Transmitter
WQOW Studio
Authorized Grade B
WEAU-TV
Interference area to WQOW-TV DTV 14.
Proposed Coverage
1149 kW
740 ft. HAAT
Eau Claire city limits derived f
1978 Sectional Aeronautical Char
Figure B
800110

ENGINEERING CERTIFICATION

As a practicing broadcast engineer with 19 years of television engineering experience and holder of an Industrial Electonics Bachelors degree, I certify that I have accurately prepared this technical engineering report. I have personally made all of the necessary calculations and either prepared, or verified the accuracy of all technical exhibits included in this report. All facts contained in this document are true based on my belief and knowledge.

David A. White
Engineering Consultant
10400 Olson Drive
Eau Claire, WI 54703

phone 715-835-1881

STATE OF WISCONSIN
JOYCE E. SPAETH
NOTARY PUBLIC

Joyce Spaeth, Notary Public

Dated: January 6th, 1997

CERTIFICATE OF SERVICE

I, Maria Alvarez-Newsom, a secretary in the law offices of Rosenman & Colin LLP, do hereby certify that on this 9th day of January, 1997, I have caused to be mailed, or hand-delivered, a copy of the foregoing "**Reply Comments and Request for Change of DTV Allotment for Station WEAU-TV to Avoid Interference**" to the following:

Roy J. Stewart, Chief*
Mass Media Bureau
Federal Communications Commission
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Washington, D.C. 20554

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COUNSEL FOR STATION WEAU-TV

Maria Alvarez Newsom
Maria Alvarez-Newsom

***BY HAND**